

After School Matters: Advancing the Financial Literacy of High School Students

Helen Roberts

University of Illinois at Chicago, 601 S. Morgan St. #721 (mc 144), Chicago, IL 60607

Margo Sorgman

Indiana University Kokomo, 2300 S. Washington Street, Kokomo, IN 46903, and
University of Illinois at Chicago, 601 S. Morgan St. #723 (mc 144), Chicago, IL 60607

Kathy Parkison

Indiana University Kokomo, 2300 S. Washington Street, Kokomo, IN 46903

Luis Guillermo Serpa

Litigation Analytics, Inc., 370 Lexington Avenue, Suite 1802, New York, NY 10017

Financial literacy topics in the classroom do not necessarily mean critical thinking is being developed. For students to become financially literate, they must not only become acquainted with the vocabulary, but also learn the skills to make better decisions. This paper provides cautionary evidence that teaching financial literacy skills to high school students even in challenging areas can be effective. Concepts and skills not taught were not learned.

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IMPORTANCE OF ECONOMIC THINKING FOR HIGH SCHOOL STUDENTS

The Council for Economic Education states, “In the coming years, young people –our students, our children, our future workers, our fellow citizens, will face unprecedented economic challenges and opportunities.” (Education, 2009). High school students, particularly those in impoverished inner school communities, face an overwhelming set of economic challenges. Because of this, the Financial Fitness for Life (National Council for Economic Education, now Council for Economic Education, 2001) themes are important to enhancing their economic literacy.

Theme 1: The Economic Way of Thinking. In many ways, choice is the essence of economics. This is important for high school students beginning to experience the impact of making their own choices and the unequal distribution of resources and benefits across society. In learning about incentives, students begin to understand markets, how a market economy allocates scarce resources, and how prices are incentives. Understanding the impulse to buy and the need to save is critical at this developmental stage. The principle that people create economic systems empowers high school students, as it involves understanding their market economy and allocating resources.

Theme 2: Earning Income. A second key economic concept is opportunity cost—the next-best alternative. It is central to making a decision, especially a decision about future plans after high school. Assisting students in recognizing the true costs of their decisions, whether for work, higher education or family matters, is key to their making better choices. The earnings given up to attend school are the “largest single cost of education,” and may shift students away from pursuing higher education. Therefore, the challenge is how to assist students in correctly assessing the true short and long term costs and benefits. The short-term increase in income is from a high-school job may be tempting to students but lower their academic accomplishments career aspirations, and high school completion rates. (Marsh, 2005; Fischer, 2004)

Theme 3: Saving. The benefits to saving lie in the future, while the costs in foregone consumption are immediate and painful. Many high school students face daily challenges of living in an urban atmosphere, filled with the inequalities of resources and the opportunities for advancement and contributions to improve the community. Shifting many of these students from a view of being victims of society toward being those who can impact and change society enhances their futures.

Theme 4: Spending and Credit. Being a responsible consumer counters ubiquitous marketing which targets their potential spending decisions. Understanding how short-sighted decisions made in the high school years have long-term consequences in adulthood is critical to financial literacy.

Theme 5: Money Management: Students repeatedly assess risks and benefits of their world and its changes. This theme emphasizes understanding the risks, credit scores and reports, insurance, responses to consumer scams, and how citizens can protect themselves or recover from identity theft and other illegal practices.

THE AFTER SCHOOL MATTERS PROGRAM IN CHICAGO

The Chicago Public School System made a commitment to enhance the development of high school students in underserved settings across a number of dimensions: increase academic performance, improve social behaviors, heighten retention, improve attendance, and develop career-building skills and dispositions. Its goal is to reduce the “vast gulfs that separate and continue to widen between children and youth who flourish in school and those who do not, between the privileged and the disenfranchised.” (Hull, 2001)

To that end, the After School Matters Program (ASM) was created in 2000 as a non-profit organization. The program coordinates a vast array of after-school projects for

participating Chicago schools with high dropout rates, poor school attendance, and concerns that their students were not prepared for the world of work. In 2007-2008, 600 programs in 59 high schools partnered with 110 community-based organizations, including the University of Illinois Chicago – Center for Economic Education. (UIC-CEE) (After School Matters, 2009)

Most ASM programs provide stipends for students who meet attendance and participation standards. Programs are scheduled three days per week for three hours each day. The \$900 stipend (paid over two semesters) requires 85% or better attendance which could only be accrued if students were in school on those days. The stipends encourage attendance and connection with the high schools, an appropriate incentive given Marsh's finding that having after school jobs negatively impacts high school and postsecondary academic outcomes (Marsh, 2005).

Various studies pointed out the effectiveness of ASM. Prior to ASM enrollment, students failed 15.0% of their courses. A year later in Fall 2003, those same students failed 13.7% of their courses. Failure rates fell as participation in ASM rose. Students who had high attendance (present for 23-27 of 30 days) or very high participation (more than 27 days) in ASM failed 13.2% or 9.6% of their courses, respectively. Therefore, the lowest failure rates were by students with the highest program participation rates. Unfortunately, this was a short-term effect, since improved academic performance earned while participating in ASM disappeared 2 semesters after students stopped attending the program. (George, 2007) Yet, it tackles the problem reported by Neumark and Joyce that "low-intensity school-to-work programs encourage education, while high-intensity programs discourage education and encourage work over education." (Neumark, 2001)

Eckstein and Wolpin noted that "youths who drop out of high school have different traits than those who graduate. They are: lower school ability and/or motivation, lower expectations about the rewards from graduation, a comparative advantage at jobs that are done by non-graduates, place a higher value on leisure, and have a lower consumption value of school attendance." (Eckstein, 1999) ASM worked toward these ends.

Jenkins (Jenkins, 1995) described factors which may predict delinquent behavior and influences on students' academic performance. These include higher levels of delinquency among boys, lower family involvement in schools, family size (children in large families being expected to be less committed), family structures in terms of single parent families or children living with stepfathers, disproportionate suspension of African-American male students, and stratification of students by ability. In principle, the ASM programs attempt to overcome these factors hindering academic success by promoting positive attitudes toward education and schools. Since there are "few widespread American policies for improving educational equality and productivity with long-lasting benefits to students and society," the ASM Program may fill that gap. (Borman, 2002)

The need for an appropriate skill set in high school students was described by Murane and Levy.(Murane, 1996) They pointed out students were not being taught the "new basics", which are: reliability, positive attitude, willingness to work hard, ninth-grade-or-higher mathematics/reading abilities, ability to solve semi-structured problems at much higher levels, ability to work in groups, ability to make effective oral and written presentations, and the ability to use personal computers." Similarly, Namenwirth noted

that “misadaptation or nonadaptation to middle-class values causes school failure.” (Namenwirth, 1969)

RESEARCH DESIGN

The Center for Economic Education in the UIC Department of Economics designed a new financial literacy program (ASMFL) of 180 contact hours, taught 2008-2009 at two underserved high schools. The ASMFL program was taught by graduate students in the UIC Department of Economics, trained and mentored by the campus Center for Economic Education. The ASMFL curriculum was based on the National Council for Economic Education (now Council for Economic Education) Financial Fitness for Life (National Council for Economic Education, 2001) curriculum. Students completed the pre and post tests from that curriculum. This allowed comparisons of Chicago students with other students across the country based on the Financial Fitness for Life themes.

The curriculum promoted knowledge of consumption, decision-making/economic way of thinking, earning income, saving/investing, borrowing, and budgeting. High school students learned decision-making by making an informed decision on the purchase of a high-priced item, such as a computer or TV. They learned about the importance of earning income by comparing income levels of individuals with different schooling and the financial benefits of pursuing college education. They received hands-on practice with job applications, writing cover letters, creating resumes, and role-playing examples of good and inadequate job interviews. Students learned about saving by studying savings accounts, certificates of deposit, money market deposit accounts, savings bonds etc. They used a spreadsheet to calculate retirement savings with different levels of income. Finally, students learned about budgeting by creating a budget for their prom.

To demonstrate their learning and dispositional outcomes students participated in a Campus Showcase. First, in a job game, students provided clues about jobs and the audience tried to identify the occupation. Second, students role-played examples of good and inadequate job interviews. Finally, the prom budget was demonstrated by playing a game with the audience pricing the most important elements (clothes, shoes, tickets, transportation etc.) and suggesting possible saving strategies. They displayed completed protocols from the course activities and sample resumes. Additionally, they took what they learned on the road and did mini lessons with elementary-age attendees at nearby libraries. These components reflect the Deweyan principle that “education through occupations” enables students to learn school subjects with work as the context for their learning.”(Benson, 1997)

CHARACTERISTICS OF PARTICIPATING HIGH SCHOOLS

Two high schools participated in the ASMFL program. Table 1 provides school and district characteristics.

Table 1. School Characteristics

2007 Data	High School A	High School B	District	State
Number of students	1,245	1570	390,243	2,077,856
Percent White	5.7	0.0	8.3	54.9
Percent Black	64.4	99.6	46.9	19.6
Percent Hispanic	25.9	0.4	38.9	19.3
Percent Low Income	98.6	94.7	84.9	40.9
Percent Limited English	7.1	0.1	14.4	7.2
Graduation Rates	44.4	71.5	66.0	85.9
Senior Year Dropout Rates	11.5	7.0	8.3	3.5
Composite ACT Scores	14.0	17.0	17.6	20.3
% met IL standards	10.0	19.0	59.6	73.8

HYPOTHESIS

This study proposed to measure student financial literacy gains via pre- and post-tests. The tests used were developed by the National Council on Economic Education (now Council for Economic Education) and normed on a national sample of high school students. We analyzed the questions using the five Financial Fitness for Life themes. Given the assigned curriculum, we expected gains in scores across all themes.

RESULTS

Implementation deviated from the planned program. Pre- and post-testing were set up for different entry and exit points in the curriculum. School A met that requirement, hence 3 pre-test and 3 post-test scores over 3 semesters. In contrast, School B only administered only one pre-test/post-test assessment, hence one pre-test and one post-test score. Schools also taught different parts of the curriculum because of time—availability of students depended on school policies. Therefore, School A did not administer the entire post-test since they had not reached those themes. High School A's 3 scores are 40% correct on the first session's pre-test, 36% correct on the second session's pre-test and 45% on the third session's pre-test. The students scored 40% on the pre-test and scored 25% on the first session's post-test. Did they actually lose knowledge over the session? Crucially, the schools were the same but the students populating them were not necessarily the same.

Paired analysis for the program (e.g., how the scores changed for a single student, pre- to post-) was completed. Predictably, results differed with the conditions of the interventions. For example, when the program included the full ninety instructional hours, learning gains were stronger. Additionally, themes actually taught in a given program showed stronger gains. Our hypothesis that if you teach it, they will learn, is tentatively supported by a closer look at individual questions in the savings theme. We identified 4 seminal questions (Table 2). For the concepts actually taught, and using only scores for students for whom both pre- and post-tests were available, students showed improvement, compared with a control question which was not taught to this group. The themes and the average percent correctly answered on the pre- and post-tests are included below in Table 3. Similarly, for themes which were to be taught in the spring (Saving, Theme 3, and Money Management, Theme 5, students did not score more correct answers in the post-tests.

Table 2. Content Scores:

Percent correct for pre- and post-tests, same-program comparisons.

High School A, Fall 2008

Concept	Pre-Test: HS A N=15	Post-Test: HS A N=15
Compound Interest	6.7	46.7
Growth of Principal	20.0	53.3
Time Value of Money	6.7	26.7
Rule of 72 (not taught)	26.7	26.7

High School B, Fall 2009, N=22

	Theme 1	Theme 2	Theme 3	Theme 4	Theme 5
Pre-Test	48.9	38.9	32.2	31.1	37.8
Post-Test	47.5	43.6	33.9	42.9	38.6

DISCUSSION OF FINDINGS

This nationally-normed FFFL test provides a profile for U.S. students' financial literacy. Nationally, students are most proficient in Theme 1: The Economic Way of Thinking and Theme 2: Earning Income, followed by Theme 5: Money Management. Students are less financially literate when it comes to Theme 4: Spending and Credit. Their lowest pre-test scores are in Theme 3: Saving.

Chicago students improved in Theme 2: Earning Income, and Theme 4: Spending and Credit, when concepts in those themes were taught. Informal feedback from instructors suggests that based on the strength of Theme 1 in the pre-test, they shifted

their focus to the other themes. But, as is so often the case, the knowledge advantage does not continue. There is evidence that college students do not work for the highest possible grade but for a good-enough one (Allgood 2001, Babcock 2010, Babcock and Marks 2011). If high-school students approach financial literacy programs and themes in a similar fashion, this might account for the decline in post-test scores in that theme. Additionally, these themes require a heightened sense of critical thinking, which make them the most complicated of the financial literacy themes.

LIMITATIONS OF THE RESEARCH DESIGN

The major limitation to this study was the uneven implementation of the program between schools. Because instruction started later at School A, instructional time was reduced, impacting the delivery of all 5 themes. At School B, it impacted pre-post testing across different entry/exit points.

A second limitation was the problem of self-selection. In many ASM school sites, administrative assistants, counselors, and teachers recommended students take the program on the basis of its focus and their views of its appropriateness for students. Therefore, self-selection could have biased our sample. Some students self-selected into the program, while others were assigned. Students who were assigned were not identifiable. This lack of random student assignments was seen as a major weakness in research studies by Castellano, et al. (Castellano, 2003). One solution to the selection bias problem has been to use results from programs where not all applicants can be admitted and where those who are admitted are randomly chosen. That avenue was not available to the researchers. George, et al. (George, 2007) looked at selection bias issues for their research into academic outcomes for ASM students and finds some selection bias, but not large effects on their outcome variables.

CONCLUSIONS

High school students living in challenging economic circumstances require comprehensive curriculum and instruction in economics and financial literacy. Our financial literacy program was designed to further that goal. Quality curriculum and assessment were provided via Council for Economic Education protocols through the Financial Fitness for Life curriculum and nationally-normed tests. UIC economics graduate students provided quality instruction, insuring instructors had the economic literacy demanded in the classroom, but often not delivered because teachers lack preparation in economics.

Data from this study suggest that when students are taught financial literacy themes, literacy gains are made. However, the reality of implementing our program in two underserved schools resulted in uneven instruction in those themes. Where there was uneven instruction, the literacy gains become more variable. For example, in the Savings theme students' scores increased. In contrast, The Economic Way of Thinking theme's scores varied. This may also be explained by students' optimizing behavior over their scarce time.

However, what comes through in our study is the fact that if you teach economics and financial literacy content, students will learn it. The After School Matters mission is “Chicago teens need to believe they have a future, and adults need to help them get there.” (Vision Statement for After School Matters, <http://www.afterschoolmatters.org/about>, accessed August 9, 2009) The UIC Center for Economic Education is working to make that happen. Despite the limitations in our school-based research study, there is evidence that improvement is possible. Given the dynamics in the global economic climate, improvement is imperative.

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